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Face-to-face language learning at a distance? A study of a videoconference try-out

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Videoconferencing has been proposed as a technology which has an immediate and beneficial application to language learning, because it enables face-to-face communication at a distance. The costs remain high, however, and course providers need to be sure what additional 'pedagogical overheads' are involved, i.e. in the rethinking of teaching approaches and the preparation of material. This paper reports on a study of a videoconference tutorial carried out as part of the distance learning component of a course in Professional English. The study shows that the interaction between teacher, subject expert and students was characterised by the absence, as well as the presence, of important features of face-to-face communication, and that certain kinds of tutorial activity, such as individual correction, and the management of group discussion, were not especially well supported by the technology used. We discuss the implications of this for the pedagogy of language teaching by videoconference, and draw some lessons for the incorporation of the technology into the mainstream of distance language learning.

Introduction – videoconferencing for language learning

A videoconference is a conversation that goes on in real time, with the participants in different locations, seeing and hearing each other via TV monitors. The technology to do this has been available for some time (e.g. Bray & Reid 1977 describe the British Post Office's 'Confravision' project which linked five major cities around the world)¹, but until recently it has been expensive and used mainly by larger

organisations such as public telephone companies and national distance learning institutions. With the advent of high-speed data-communications networks, such as Superjanet (United Kingdom Education and Research Networking Association 1996)², a greater range of educational providers have access to the technology, and the possibility of widespread small-scale videoconferencing for educational purposes has arisen. One area in which this is thought to be particularly appropriate is in distance foreign language learning.

This is because it is felt that languages are best learned through communicative dialogue, and that dialogue in which participants can see each other is naturally more communicative. The developers of the Hipernet system in Cambridge, for example, justify video-conferencing as follows:

"...Dialogue is important in second language learning, as, without practice and reinforcement of dialogue skills, such learning is likely to take place less efficiently, if at all. Synchronous feedback to the speaker is a crucial component of oral practice. This is direct motivation for the provision of audio connections between participants in a computer based language learning system. It seems intuitively reasonable to assume that for dialogue to occur naturally, and with maximum effectiveness in terms of reciprocal understanding, it is helpful if participants can also see each other, both to motivate the dialogue and to allow visual cues to be used..." (McAndrew *et al* 1996)³.

According to the Multimedia Teleschool project, the learning environment which is created by this enhanced interaction lends itself to comparison with face-to-face communication:

"... These new communication tools allow the construction of 'virtual' learning environments which have more in common with face-to-face teaching and learning than with traditional distance learning...while they are not as media-rich as face-to-face learning situations, telematic technologies can...provide the distance learner with an environment not previously available outside the classroom..."(Jennings 1995)⁴.

The 'value-added' of videoconferencing for distance language learning is thus to make remote interaction between participants more 'natural' or closer to face-to-face communication, by adding the visual dimension. This enhances learning, as Exeter's ReLaTe project argues, by broadening the range of language skills which can be practised:

"..the system is very good for practising several language skills at the same time: listening, speaking, reading and writing. In many respects

participants felt that remote teaching has considerably greater potential than face-to-face methods. It has already demonstrated that it can provide a rapid way of resurrecting 'lost' language skills of speaking and listening, which are the first to be eroded by lack of practice/exposure.." (Matthews *et al.* 1996)⁵.

The theoretical attraction of such enhancements to both learners and teachers is obvious, and as we have observed, the financial costs are becoming less prohibitive. But there is a question whether these advantages come free of 'pedagogical overheads', in terms of effort in preparation and the adaptation of techniques. Can remote language learners simply switch into videoconferencing technology and find themselves automatically learning better? Does distance teaching simply have to be more like face-to-face teaching in order to find itself improved? Or does the exploitation of the visual dimension demand new teaching approaches and learning habits? These questions are important ones for all who are concerned with the quality of language learning at a distance, and they are particularly pressing for those educational providers who are not blessed with large research budgets but who are nevertheless under pressure to provide an optimum and up-to-date service to their learners. It is they who are in the position of trying out the medium under commercial as well as educational constraints. The extent to which the time and effort spent in designing and implementing a videoconferencing component for an existing course results in an increase in learner/ customer satisfaction, determines whether the technology (and sometimes the business itself) gets a second chance.

Finding answers to the questions about pedagogical overheads is, of course, not straightforward. There are a number of complicating factors. There is the possibility of variation in the configuration of 'sites' which may be utilised. For example, we have mentioned 'seeing and hearing' on screen, but there are different configurations of the way teacher and learners may be physically disposed, such as: teacher at site A with all the learners at site B; or teacher and some of the

learners at site A with other learners variously distributed at sites B, C & D; or no teacher at all, with collaborating learners at different sites, etc. Different physical dispositions allow different amounts of actual face-to-face communication between some of the participants, affecting the way the remote interactions proceed. Another complicating factor is the flexibility of the communication channels which a conference uses. The screen and microphone link between individuals and/or groups can sometimes be supplemented by computer-based writing and drawing tools and presentation areas, which can be viewed and used simultaneously by all participants, creating a virtual shared workspace. The ReLaTe project describes such a system:

"...The scenario on which the work is based is that of a tutor sitting in front of a computer at one site with students sitting in front of computers at the other, remote, site. Each participant in this language class has their own UNIX workstation, with attached camera and microphone... participants have access to a shared whiteboard tool and other on-line resources – it is an example of computer supported collaborative working rather than just video conferencing..." (Pack 1996)⁶.

Clearly, the pedagogical considerations inherent in managing collaborative work are different from those involved in organising and delivering a lecture, remotely or otherwise, but the question arises whether remote collaborative working has more in common with face-to-face collaborative working, or with remote lecturing? Is the nature of remote tele-interaction, as experienced by language teachers and learners, an independent factor, or is it mainly governed by the same things that govern the experience of face-to-face learning, i.e. the interaction of personalities, location and learning content?

The focus of this paper is the experience of a 'try-out' video conference language class conducted by a small private language school concerned to update its provision of Professional English for distance clients. The configuration used had a teacher and a professional

expert at one site, and a teacher and a group of students at another. The experience of others using this kind of configuration in non-language learning contexts (e.g. Webster 1996⁷, Laurillard 1993⁸) has suggested that it tends to result in a traditional didactic lecture type of interaction, so that the benefits are counted more in terms of the costs saved in giving remote learners access to an expert, rather than in terms of the quality of the learning experience. Whilst the cost-saving dimension was certainly of interest to the organisers of this try-out, a great deal of pedagogical preparation also went into the design of the programme, in an attempt to take the interaction beyond a straightforward lecture into areas where communicative language learning opportunities might exist.

Our concern here is to try and evaluate the occasion, from the point of view of both participants and observers, with regard to its internal dynamics (i.e. how it compared to a face-to-face session), and to its role within the larger distance learning course of which it was an experimental part. We hope thus to determine what kind of demands the new technology makes on the teaching methodology which has been established for the course as paper and audio-based; to generate some realistic objectives for future sessions; and perhaps to generalise our experience towards a critique of the 'communicativeness' which is being claimed for the videoconferencing medium and its relevance for language learning.

The study

Background

The videoconference took place as part of a course in Professional English designed and run by London School of English⁹ for the Norwegian Insurance Academy. The six students chosen for the video-conferencing session had just completed a combined direct-and-distance course in English for the Insurance Industry. The direct component, a small-group, intensive course had been taught locally in Oslo and was based on fairly standard procedures for small-group, intensive, specialised English

courses. The distance component, that preceded and followed the direct component, was taught from London and employed less traditional pedagogy. It was based on audio-cassette and telephone-based tutorial exploitation of student-transcribed samples of their own (inter)language, using systems and methods developed at the London School of English. The purpose of the videoconferencing component was to extend the coursework already undertaken by the students, to enable the distance tutor to follow up issues developed on an individual basis, to generate new language opportunity, and to create opportunities for further exploitation in the ongoing distance course. The programme was based on two main ingredients – a teacher-tutorial and an expert-interview. The first was meant to represent something of the basic way in which a teacher works a group or class in a shared exploration of grammar, vocabulary etc. The second was intended to represent the use by a teacher of external resources, bringing in someone from outside who would talk to the students and then answer their questions. The aim was to see how well these two basic set-pieces could function, for all concerned, over the video-conferencing link.

Setup

The conference was conducted between two sites, in London and Oslo. The London site had a single swivel camera facing a table behind which the three main participants, two observers and the programme director sat in a line. It could transmit 'talking head' closeups of individuals, shots of two or three individuals side by side, or 'University Challenge'-type shots showing two rows of people, one above the other. The participants could see the shot that was being transmitted, on a small monitor in front of them. Their view of the other site was a large monitor directly in front and about six feet away from them. The camera shots at this end were controlled by the programme director. At the Oslo site, the six students, two teachers and a technical advisor were seated round a hexagonal table with a well in the centre. Each participant faced a fixed camera and monitor at the opposite side

of the table, in the well. The room also had the facility for a 'birds-eye' shot of the whole table from above. The camera shots could be controlled by the group tutor, or by voice-activated camera control, whereby the camera would automatically switch to whoever was speaking.

At the London site the active participants were: the course distance tutor, the English insurance expert, and a bilingual (English-Norwegian) tutor. At the Oslo site they were: the course direct tutor (English speaking), a bilingual tutor from the Communications Department of the University of Oslo, and six 'students' (Norwegian insurance professionals) whose proficiency in English varied from lower to upper intermediate.

The technical setup had been previously rehearsed with the London and Oslo tutors and organisers present, but neither the English expert nor any of the students had any previous experience of videoconferencing.

Session programme

The programme was divided into two 75-minute sessions with a 30-minute interval. Each of the sessions had one 15-minute and two 30-minute activities. The first session consisted of: an introduction, in which participants identified themselves, and camera and sound settings were finalised; a 'questions to the expert' activity in which students interviewed the guest expert; and an 'English for speakers of Norwegian lesson' in which the monolingual UK-based teacher led a discussion of errors arising from a worksheet previously completed by the students. The interval was for preparation of contributions to the second session. Session 2 consisted of: a discussion with the expert, in which students presented their views on a comparison of the UK and Norwegian insurance industries; a 'creating materials' activity in which the bilingual UK-based teacher helped the students record a conversation in Norwegian and English, covering the areas of vocabulary that they wished to acquire; and a feedback session in which the students reported on their experience of the videoconference.

This programme was designed to enable the distance tutor, who had previously only

had individual phone contact with the students, to exploit the group access made possible by the medium, and to deal with language issues which arose from the students' shared Norwegian background and from their interests in English for insurance usage.

Data collection

The data described below was collected by 2 observers at the London site, and from a post-session questionnaire. One observer focused on recording information about how often and how long participants spoke. Each time a participant said anything it was recorded as a 'turn' and timed in minutes and seconds. (The minimum turn, e.g. a single word interjection, was recorded as lasting 1 second). The times are inevitably approximate, but nevertheless give a good picture of the overall 'shape' of the session. The other observer concentrated on providing an impression of how each participant 'came across', in terms of body language and apparent demeanour. The impression is necessarily subjective, but gives a sense of what the experience was like for the participants as individuals. The questionnaire dealt with the participants' reflections on what had gone on, and on their sense of what was worthwhile about it.

Results of the study

Talking time and turns

In total the six tutorial sessions lasted 121 minutes, about half an hour being lost in between-session breaks and technical and facilitative matters. Within the sessions, total

on-screen talking time between expert, tutors and students, excluding pauses, was recorded as 65 minutes (time and turn data for each session is given in the appendix). Considering that the organisers had been able to rehearse the setup (see p. 8), this wastage suggests quite a large degree of implicit interference from the technology, although it was not apparent that this was happening at the time.

The total number of turns was 179, broken down as shown in Table 1.

This distribution of talking time does not suggest a predominantly lecture-type interaction, in which the London expert could have been expected to account for more of the total time, but nor does it indicate a discussion-type interaction, in which the more numerous Norwegian participants would have had the larger share. The number and short duration of turns attributed to the Oslo group is more consistent with a question-and-answer session, an outcome that was intended by the designers of the programme (see p. 8). But we can see that the student participation was in fact dominated by two people (TA & JH). The small number, and shortness of duration, of the turns of the other four students did not allow much productive language opportunity for them. Overall, therefore, we must conclude that for the majority of the students the experience was one where listening and not speaking played the major role.

A further analysis of the shape of the interaction can be made with reference to the way turns were sequenced. A simple question-and-answer session consists of two turns; first the questioner then the answerer. In a more complex interaction there might be a follow-up question-turn followed by another answer-

Table 1 Total number of turn. TS: course tutor (London); MT: guest expert (London); SM: guest bi-lingual tutor (London); PT: course tutor (Oslo); TA,JH,AB,HH,MB,SF: students (Oslo); TE: guest bi-lingual tutor (Oslo)

London: turns: 67 (37%) talking time: 39 mins (60%)
Oslo: turns: 112 (62%) talking time: 26 mins (40%)

Participant	TS	MT	SM	PT	TA	HH	AB	MB	JH	SF	TE
No. of turns	20	32	15	19	25	7	9	8	22	12	10
Total time	11	25	3	2	5	1	3	1	9	3	2
% turns	11	17	8	11	14	4	5	4	12	7	6
% time	17	38	5	3	8	1	5	1	14	5	3

turn, and so on. Here we will call these sequences 'chains', and look in particular for two types:

- a) Chains involving either the guest expert or someone acting as a 'chair' alternating with one of the students. This is equivalent to a conventional 'classroom' type interaction. (The students are indicated in bold in the data below).
- b) Chains involving two or more of the students alternating. This is a 'discussion' type of interaction. (These chains are indicated in the data below by brackets).

By looking at incidences where these types of chain extended beyond the basic question-answer (i.e. for more than two turns) we might get some idea of the degree of control that the students were able to exercise over the way the interaction proceeded.

In the first session, for example (26 minutes), the students questioned the guest expert (MT) about aspects of the UK insurance industry. As might be expected, the guest expert did most of the talking in response to the questions, whilst the session chair (PT – Oslo tutor) registered a number of short turns introducing the questioners. However, we might also have expected that since the students had prepared questions earlier on the basis of listening to a tape of MT (see course description, pp. 7–8), that there would have been more occasions on which they followed up his answers with observations of their own. Looking at the turn-chains for this session, we can see that this happened only three times, twice with the same student:

Session 1 chains (total turns 38):

- a) **JH**-MT-**JH**-MT
- b) **HH**-MT-**HH**-MT
- c) **JH**-MT-**JH**-MT-**JH**

Similarly with session 2 (31 minutes), which was designed as a tutorial discussion and lasted 31 minutes. Here we find five chains extending beyond two turns:

Session 2 chains (total turns 42):

- a) TS-TA-TS-TA-TS

- b) TS-**HH**-TS-**HH**-TS
- c) **JH**-TS-**JH**-TS
- d) (**HH**-**JH**)
- e) SM-(**JH**-SF)-SM

The distribution of both turns and talking time here was skewed towards TS (London tutor), which suggests that the session did not work as a discussion (probably because he was chairing as well as leading it). However, there was slightly more complexity of interaction here than in the first session, with three students (TA, HH, JH) getting involved in alternations with TS (a, b, c above), and two occasions on which students had an exchange amongst themselves (d, e).

In session 3 (32 minutes) the pattern of session 1 was repeated, although chaired from the Oslo side, which gave rise to one extended chain involving the expert and the student chair. There were no exchanges amongst the students themselves, and one of them (HH) did not contribute at all.

Session 3 chains (total turns 46):

- a) **AB**-MT-**AB**
- b) MT-**JH**-MT-**JH**
- c) **TA**-MT-**TA**-MT-**TA**-MT-**TA**-MT-**TA**-MT-**TA**
- d) **JH**-MT-**JH**-MT-**JH**-MT

Sessions 4 and 5 occurred in reverse order to the programme; the next session was therefore the inter-student discussion about the conference itself, in English and Norwegian (18 minutes). Again, there were few extended chains, despite the use of L1 and the fact that it was chaired by one of the Norwegian group (TE).

Session 4 chains (total turns 25):

- a) TE-**MB**-TE-**MB**-TE-**MB**-TE
- b) **TA**-TE-**TA**-TE-**TA**-TE
- c) (**SF**-**HH**-**SF**)

The last session (14 minutes) was a bilingual conversation between students and SM (London bilingual tutor), MT (London guest expert) and TS (London tutor), covering linguistic and subject matter issues. The students were supposed to speak Norwegian whilst the

London group spoke English. This produced the fairest distribution of time and the greatest variety of exchanges, although one student (HH) did not participate, and another (MB) had only one unheeded interjection. The chains included two which showed interaction between the students themselves (a, d below).

Session 5 chains (total turns 28):

- a) SM-(TA-AB-JH-TA)
- b) SM-SF-SM-SF-SM-SF
- c) SM-MB-SM-MB
- d) TA-SM-(TA-SF)-SM-(TA-JH)-SM

The social negotiation seen in this last session, which resulted in more complex types of interaction, may have been facilitated by the fact that the students were able to speak their native language. However, it is interesting that the same thing did not happen in session 4, when they could also speak Norwegian. It is possible that the absence of a Chair for the discussion at the Oslo end, and the role that the London bilingual tutor took as an interlocutor rather than expert or teacher, encouraged a freer type of exchange. In any case, this part of the session demonstrated that a non-lecture interaction was possible, and poses the pedagogical challenge of making it happen entirely in L2 rather than bi-lingually. Somewhat ironically, the least effective part of the programme was the second part – the ‘language lesson’ – which despite its intention to promote tutorial discussion came to resemble a lecture from the London-based tutor.

Discussion

The extent and nature of student interaction with native English speakers during this conference does not amount to the kind of dialogue which could be expected to have immediate language learning benefits, as discussed in the introduction to this paper. However, it does appear that the pedagogical preparation that went into the structuring of the programme had the effect of enriching the interaction so that it was not simply a lecture. For one or two of the students (e.g. JH, TA), the experience was perhaps akin to a seminar or discussion-group, but for the majority it was a

question-and-answer session to which their contribution was small but significant. The pedagogical overheads for this degree of productive interaction were considerable: three tutors and a subject expert were briefed and/or rehearsed, audio tapes were created and exchanged, worksheets were designed, completed and marked, questions were prepared etc. Whilst it is true that much of this work was due to the fact that this was the first session of its kind (further sessions would be expected to need less preparation), there is still a question as to whether the kind of dialogue which occurs with spontaneous ‘natural’ discussion is in principle achievable with this medium. Is it possible to develop a more complex kind of language use, actively involving all the student group, in a videoconference? Or might the technology itself be a barrier? Whilst it is interesting to speculate that the problems of lack of interactivity met in this study may be the same ones which can arise in a face-to-face classroom where the learners are unforthcoming, or where one or two people dominate, there are also relevant technical issues. One such is the need, in this instance, to look at the camera when speaking instead of, intuitively, at the face of the other person on the monitor. Another is the slight delay in the transmission, which puts rapid reaction out of synch. Laurillard (*op. cit.* p. 13) comments that effects such as these mar the interaction, and also that the size of the TV image one communicates with is very small in comparison to life size, so that the effect of a real meeting is lost. This essentially subjective impression may or may not be the experience of all the participants in a conference. To see whether these circumstances did contribute to the learners’ reticence in our case study, we examined some of the subjective impressions recorded by an observer and by students and tutors.

Subjective impressions

The Observer

The monitors used in this study were about 50cm, set at a distance of about 2m from the participants’ positions. These large monitors showed a view of the participants at the other

site. There were also smaller monitors showing the view which was being transmitted of one's own site. As many of the incoming camera shots were 'head-and-shoulders' it was possible to observe quite small gestures and facial expressions. The observer (at the London site) was therefore able to comment on aspects of behaviour which might affect the quality of the transmission, for example:

T. started with a question, wearing stripes, waving his pen and moving his hands – the three things which during last session we were told not to do. He proceeded to do this throughout the session and the resulting image was not good, with a great deal of 'blocks' of colour, very little detail in the picture.

How this loss of quality might have affected the interaction is not obvious. It clearly detracts from the illusion of 'lifelikeness', but it may also be consciously noticed and allowed for. Perhaps more significant are those aspects of body language which may not be noticed, but which are ambiguous in the context and may confuse or interrupt communication, e.g.

T. nodded intermittently and looked from side to side, not looking into the camera. Is he nodding consciously to show attention and comprehension or as a natural reaction in his own space? Since the synch. is slightly out we are unsure what he is nodding to. We cannot assign significance or read the signals as clearly as we normally would.

What is made explicit here is the difficulty of interpreting some of the unconscious behaviour of participants in the conference. This behaviour would not be evident in the absence of the visual dimension. What the observer notes consciously may well be experienced unconsciously by other participants, affecting the way they behave. An example of this occurs during the second activity of the first session, in which the London tutor was trying to elicit comments from the learners about their perceptions of grammatical difficulties in English. He was speaking directly to one of

the students, appearing as head-and-shoulders himself, whilst having the same view of her. The observer experienced this view of the student as follows:

...She looks at him, sobering up, listening to his counselling and reassurance, suddenly this is very personal interaction. As an observer I feel aware that this is perhaps what he would have been telling her over the telephone in a private conversation. Are we voyeurs at this point? Does she want us to be hearing and seeing her, listening and watching? Over the telephone especially, it would resemble a confessional.

Partly this impression was created by the 'head-and-shoulders' effect itself. It causes the viewer to focus unrelentingly and somewhat unnaturally on the reactions of the listener, and certainly it appeared from the London end as though the student who was being addressed was in some sense 'caught in the headlights' of our attention. However, this may not have been her experience, as she was simply watching the talking head of her tutor, whilst sitting in a room with seven other people. The observer makes the point that the normal awareness of 'who is talking to who' can thus be undermined:

S. asked "I wonder if you could tell me a little (or us) about..." . It would appear she suddenly became aware of the group presence. This seems to be a feature, the distinction between the one-to-one relationship and the group relationship. As you look at the camera/monitor it can appear very much one-to-one, especially if the Oslo student asking the question is able to see only the one person in London.

The London tutor also experienced some frustration at not being able to signal that he was opening a question out to the wider group, rather than continuing in a one-to-one conversation. In a face-to-face situation this is done simply by moving the gaze around the room. In the conference, if the camera is pointing at someone, they end up having to answer the question. This is dependent solely on the person who controls the camera. In our study the

situation was exacerbated by the fact that camera control at the Oslo end was in the hands of the tutor there, so that the tutor in London could not choose to widen his view, in order to redirect his questions.

Although a wider camera view (3-in-a-row) was available at the London site, it was not available at the Oslo end, which mainly used the head-and-shoulders shot. This mitigated against the communication of a group response, as in a face-to-face situation body language is used to manage turns etc. (e.g. a nod in the direction of the person, or a hand gesture to suggest "you go ahead"). In this situation, when such intuitive interaction management did occur, it was noted by the observer as something special:

Suddenly J. was seen waving his pen. It creates a nice link to see someone indicating they would like to speak and then hearing them, especially when in frequent instances they had been called upon to speak so there was a sense of it being involuntary. Now they were actively wanting to be involved, adding a different dynamic and quality to the interaction.

It seems reasonable to assume that, for a group discussion to develop, participants must be free to use these extra-linguistic means of interaction management. But it is clear that, in this case at least, the technology did not support such expression. As this medium becomes more familiar to users, especially those chairing or controlling the cameras, it is possible that ways will be found to allow body language to play its normal face-to-face role, but in the meantime it may be that participants will have to learn to adapt. Body language may have to be used consciously, as a means of highlighting or emphasis, rather than intuitively as a system of on-going interaction management. This will inevitably add to the pedagogical overheads, as it may prove an intolerable additional cognitive load on those who are anyway struggling with the language. Nevertheless, if natural group discussion is to be achieved, some way has to be found to compensate for those aspects of face-to-face communication which are unconsciously but

significantly perceived to be absent.

Participants

Participants' subjective impressions were recorded in session 4 of the programme, and in a questionnaire two days later. Whilst allowing for the fact that this was their first experience of videoconferencing, we were interested in their perceptions of the similarities and differences between this medium and face-to-face interaction, and whether the students felt it to be a motivating experience.

As discussed in the previous section, the interaction was seen by most of the participants as quite different from either a lecture with questions, an ordinary language class, or a business meeting. They found it "interesting", "motivating", and "useful", but also "different" and "testing". Most regarded the visual dimension as central to the experience. Three people commented that it was easier to understand the subject expert when they could see him; three ranked "seeing what TS (the London tutor) looked like" high as an interest factor; one was concerned about "seeing myself on the screen"; one referred to the pleasure of "meeting people face-to-face" etc.

Some of the Norwegian side drew further parallels with the face-to-face situation, commenting that the experience was "authentic", "an impression of a real situation", "like being in the same room" etc. But this was not concurred with by the London tutor, who felt that you "can't compare the experience with face-to-face" and who did not like the way the medium interfered with his ability to teach, especially to respond, interrupt and correct. The subject expert also felt that he was less able to judge how well he was being understood, than in a face-to-face situation.

A further relevant finding was that six of the Norwegian side judged, in the questionnaire, that SM (London bilingual tutor) had spoken least of the five tutor/experts. In fact, as the talking time data shows, she spoke for longer than either of the tutors at the Oslo end (PT & TE), although most of her contribution occurred in the last session. This suggests that the face-to-face reality (eight people in a room

in Oslo, with the opportunity for informal interaction that that allows), may be experienced in some way as 'more real' than the telematic reality (the talking heads on the screen).

Despite the advantages of vision, students still experienced difficulty with comprehension. This was partly because the subject expert spoke quite quickly, but also because, despite the preparation that the students had done, some of the technical vocabulary remained unfamiliar. Three of the Norwegians commented on the amount of technical vocabulary used, with two suggesting that better preparation of the 'theme' of the discussion might have helped them. This might be interpreted as an issue of control of the discussion, which the technology did not place in the hands of the learners themselves (although the programme tried to do so in session 4). Two of the students commented that they had not been able to contribute as much as they had wanted to, and one of the Oslo tutors said he felt he had talked more than he would have wanted to. It seems that the rather tight focus that the camera viewpoints imposed on the interaction, together with the fact that these viewpoints were being controlled by people who were not actually involved in the discourse, gave too little scope for the less confident learners to use the medium to resolve their language difficulties. However, care should be taken in equating learner satisfaction too closely with active participation, since one of the students who participated little nevertheless expressed great satisfaction with what she had seen and heard. Listening, after all, is one of the 'lost skills' (see introduction) which this medium is supposed to be rehabilitating.

Summary and conclusions

We set out in this study to investigate the pedagogical demands that videoconferencing technology imposes on the design of distance language learning. We hoped thereby to derive some principles for the future development of the particular course we studied, and also to make a contribution to the more general consideration of how 'communicative' the medi-

um is, in language learning terms.

We found that a great deal of pedagogical preparation had gone into the session we observed, and that the interaction consequently transcended the simple lecture-type exchange format predicted for the configuration used. It nevertheless did not achieve a form of interaction that was closely comparable to a face-to-face discussion. There is evidence of considerable motivational benefit arising from apparent face-to-face characteristics in the interaction, but also of inhibiting factors resulting from the absence of other features, which may be perceived only unconsciously.

The main pedagogical implications are:

- i) The technology, at least in the form we saw it here, mitigates against both conventional language-class-teaching approaches and natural group discussion. The language teacher is unable to introduce on-going comment, modelling and correction into the interaction, nor to moderate a group interaction, based on an intuitive perception of the group dynamic. The tutor may feel that s/he is forcing people to speak when they may not be ready or willing, thus impacting on eliciting techniques and turn-taking. Whilst in a face-to-face situation it would be normal to be talking with one person, at the same time as intermittently monitoring others in the group, in the video conferencing setup studied here, it was impossible to do this. One implication of this is that the contributions of learners, especially the less confident, should be more explicitly structured into the interaction. A second implication is that reflective teaching and learning activity, such as correction etc. may best be reserved for 'after-the-event', for example: watching the recording for self-evaluation, going through the tutorial again and picking out relevant points, highlighting key grammar points that had been raised in that section, and picking out vocabulary from the talk with the expert.
- ii) The technology distorts the normal use of body language to manage interaction. The

speaker is unable to be sure that his/her expressions and gestures are observed, or if they are, that they are interpreted in the natural way, according to the context. On one occasion during the study, whilst the voice-activated camera was in use at the Oslo end, when a student laughed, the camera switched so she found herself suddenly on camera. Caught by surprise, she instantly identified this as being "...my fault, I shouldn't have laughed...". Participants may thus start to inhibit their own responses if they feel the consequence is going to be the (unpleasant) one of being put in the spotlight and expected to speak. It may be therefore that participants are restraining or distorting their body language because of their feelings about the technology, or as a result of the constraints put on them by it and that these will adversely affect interaction and the development of language skills. One implication is that language learners may have to be in some way prepared for a video-conferencing session, taught to use verbal rather than visual cues to exchange turns, and perhaps given a set of guidelines on what kind of body language to use, and how to dress, even, so as to maintain the highest visual quality possible and the smoothest flow in interaction. Another implication is that those who manage camera viewpoints will have to develop skills in representing the dynamics of a group interaction, according to whether one-to-one or one-to-many interactions are predominant.

- iii) A videoconference needs to take place in the context of a course of activities which have been pedagogically designed, contributing a dimension which enhances progression towards some language learning goal. Here, the distribution of audio cassette copies of an interview with the course expert to students who were then able to question him live illustrated the potential of mixed media and integrative strategies in binding video-conferencing into the fabric of coherently designed courses. A videoconference should not be seen as a

goal in itself, or as a 'test' of communication, but should build on previous teaching and learning and lay the ground for subsequent work.

The direction this points in for the further development of video-conferencing within this course, is towards a greater emphasis on structured student contribution and the use of recordings of the sessions for follow-up reflective and language-oriented work. Encouraging the students to prepare their own contributions (perhaps going beyond questions, to mini-presentations or position statements), to deliver them in the context of interaction with the subject expert, and then to critically review them in the light of the session as a whole, should have the effect firstly of increasing the amount and quality of individual participation, and secondly of eventually creating the conditions of confidence to support a naturally-emerging group discussion.

With regard to the general 'communicativeness' of the medium, there seems little doubt that the motivational effect of being able to interact in a face-to-face-like manner with a native speaker expert is considerable, and that this enhances the sense of comprehension and participation. The technology used for this trial, however, showed that the experience, for both learners and teacher, was to some extent governed by the absence of aspects of face-to-face mode rather than their presence. This situation, where some but not all face-to-face expectations are met, is surely unique to tele-interaction and suggests that the technology does have an independent role in defining the learning experience. Defining it, moreover, as one with somewhat fewer claims to communicativeness than we might hope for. Nevertheless, we have little doubt that video-conferencing technology has a lot to offer distance language learning. The Hipernet project (McAndrew *et al.*, *op cit*), at the technological 'leading edge' has shown that collaborative working remotely is in some senses an improvement on the face-to-face situation. Our study, in the technical mainstream, indicates that more can be done with a site-to-site

group conference than a simple lecture. We believe that videoconferencing represents a way forward for distance language learning, but recognise that the language interaction it supports is in many ways different from the 'face-to-face' equivalent. This means that we have to plan for it and adapt our teaching and learning methodologies accordingly. That way we will be able to enhance, rather than simply repackage, the educational service we offer.

Notes

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Appendix

Session 1 (26 minutes)

Participant	TS	MT	SM	PT	TA	HH	AB	MB	JH	SF	TE
No. of turns	2	13		8	3	2	1	1	6	2	
Total time	05"	12.15		08"	45"	25"	15"	10"	45"	35"	

Session 2 (31 minutes)

Participant	TS	MT	SM	PT	TA	HH	AB	MB	JH	SF	TE
No. of turns	16		3	5	2	4	1	2	6	3	
Total time	9.50		35"	05'	10"	25"	15"	10"	1.15	50"	

Session 3 (32 minutes)

Participant	TS	MT	SM	PT	TA	HH	AB	MB	JH	SF	TE
No. of turns	1	18	2	3	12		3	1	5	1	
Total time	01"	12.35	02"	30"	3.05		40"	10"	4.50	20"	

Session 4 (18 minutes)

Participant	TS	MT	SM	PT	TA	HH	AB	MB	JH	SF	TE
No. of turns			1	3	1	2	3	3	2	10	
Total time			15"	45"	20"	1.10	45"	1.45	35"	2.15	

Session 5 (14 minutes)

Participant	TS	MT	SM	PT	TA	HH	AB	MB	JH	SF	TE
No. of turns	1	1	10	2	5				1	1	2
(Norweg.)							(2)	(1)	(1)	(3)	(7)
Total time	1.10	20"	2.40	15"	40"		30"	01"	40"	30"	1.35